

# Technical Assistance, Environmental Liability Clarification or Post-Closure Modification Request

Form 4400-237 (R 12/18)

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## Section 1. Contact and Recipient Information

### Requester Information

This is the person requesting technical assistance or a post-closure modification review, that his or her liability be clarified or a specialized agreement and is identified as the requester in Section 7. DNR will address its response letter to this person.

Last Name	First	MI	Organization/ Business Name		
Wahl	Scott		Tyco Fire Products LP		
Mailing Address			City	State	ZIP Code
2700 Industrial Parkway South			Marinette	WI	54143
Phone # (include area code)	Fax # (include area code)		Email		

The requester listed above: (select all that apply)

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Is currently the owner  | <input type="checkbox"/> Is considering selling the Property   |
| <input type="checkbox"/> Is renting or leasing the Property                                       | <input type="checkbox"/> Is considering acquiring the Property |
| <input type="checkbox"/> Is a lender with a mortgagee interest in the Property                    |  |
| <input type="checkbox"/> Other. Explain the status of the Property with respect to the applicant: |  |

### Contact Information (to be contacted with questions about this request)

Select if same as requester

Contact Last Name	First	MI	Organization/ Business Name		
Verburg	Ben		Arcadis		
Mailing Address			City	State	ZIP Code
126 N Jefferson Street, Suite 400			Milwaukee	WI	53202
Phone # (include area code)	Fax # (include area code)		Email		
(414) 276-7742			ben.verburg@arcadis.com		

### Environmental Consultant (if applicable)

Contact Last Name	First	MI	Organization/ Business Name		
Verburg	Ben		Arcadis		
Mailing Address			City	State	ZIP Code
126 N Jefferson Street, Suite 400			Milwaukee	WI	53202
Phone # (include area code)	Fax # (include area code)		Email		
(414) 276-7742			ben.verburg@arcadis.com		

## Section 2. Property Information

Property Name			FID No. (if known)		
Tyco Fire Technology Center - PFCs			438005590		
BRRTS No. (if known)			Parcel Identification Number		
0238580694					
Street Address			City	State	ZIP Code
2700 Industrial Parkway South			Marinette	WI	54143
County	Municipality where the Property is located		Property is composed of:		Property Size Acres
Marinette	<input checked="" type="radio"/> City <input type="radio"/> Town <input type="radio"/> Village of Marinette		<input type="radio"/> Single tax parcel <input checked="" type="radio"/> Multiple tax parcels		380

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1. Is a response needed by a specific date? (e.g., Property closing date) Note: Most requests are completed within 60 days. Please plan accordingly.

No  Yes

Date requested by: \_\_\_\_\_

Reason: \_\_\_\_\_

2. Is the "Requester" enrolled as a Voluntary Party in the Voluntary Party Liability Exemption (VPLE) program?

No. **Include the fee that is required for your request in Section 3, 4 or 5.**

Yes. **Do not include a separate fee.** This request will be billed separately through the VPLE Program.

**Fill out the information in Section 3, 4 or 5 which corresponds with the type of request:**

**Section 3. Technical Assistance or Post-Closure Modifications;**

**Section 4. Liability Clarification; or Section 5. Specialized Agreement.**

**Section 3. Request for Technical Assistance or Post-Closure Modification**

Select the type of technical assistance requested: [Numbers in brackets are for WI DNR Use]

- No Further Action Letter (NFA) (Immediate Actions) - NR 708.09, [183] - **Include a fee of \$350.** Use for a written response to an immediate action after a discharge of a hazardous substance occurs. Generally, these are for a one-time spill event.
- Review of Site Investigation Work Plan - NR 716.09, [135] - **Include a fee of \$700.**
- Review of Site Investigation Report - NR 716.15, [137] - **Include a fee of \$1050.**
- Approval of a Site-Specific Soil Cleanup Standard - NR 720.10 or 12, [67] - **Include a fee of \$1050.**
- Review of a Remedial Action Options Report - NR 722.13, [143] - **Include a fee of \$1050.**
- Review of a Remedial Action Design Report - NR 724.09, [148] - **Include a fee of \$1050.**
- Review of a Remedial Action Documentation Report - NR 724.15, [152] - **Include a fee of \$350**
- Review of a Long-term Monitoring Plan - NR 724.17, [25] - **Include a fee of \$425.**
- Review of an Operation and Maintenance Plan - NR 724.13, [192] - **Include a fee of \$425.**

Other Technical Assistance - s. 292.55, Wis. Stats. [97] (For request to build on an abandoned landfill use Form 4400-226)

- Schedule a Technical Assistance Meeting - **Include a fee of \$700.**
- Hazardous Waste Determination - **Include a fee of \$700.**
- Other Technical Assistance - **Include a fee of \$700.** Explain your request in an attachment.

Post-Closure Modifications - NR 727, [181]

- Post-Closure Modifications: Modification to Property boundaries and/or continuing obligations of a closed site or Property; sites may be on the GIS Registry. This also includes removal of a site or Property from the GIS Registry. **Include a fee of \$1050, and:**
  - Include a fee of \$300 for sites with residual soil contamination; and
  - Include a fee of \$350 for sites with residual groundwater contamination, monitoring wells or for vapor intrusion continuing obligations.

Attach a description of the changes you are proposing, and documentation as to why the changes are needed (if the change to a Property, site or continuing obligation will result in revised maps, maintenance plans or photographs, those documents may be submitted later in the approval process, on a case-by-case basis).

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**Skip Sections 4 and 5 if the technical assistance you are requesting is listed above and complete Sections 6 and 7 of this form.**

**Section 4. Request for Liability Clarification**

Select the type of liability clarification requested. Use the available space given or attach information, explanations, or specific questions that you need answered in DNR's reply. Complete Sections 6 and 7 of this form. **[Numbers in brackets are for DNR Use]**

"Lender" liability exemption clarification - s. 292.21, Wis. Stats. [686]

❖ **Include a fee of \$700.**

Provide the following documentation:

- (1) ownership status of the real Property, and/or the personal Property and fixtures;
- (2) an environmental assessment, in accordance with s. 292.21, Wis. Stats.;
- (3) the date the environmental assessment was conducted by the lender;
- (4) the date of the Property acquisition; for foreclosure actions, include a copy of the signed and dated court order confirming the sheriff's sale.
- (5) documentation showing how the Property was acquired and the steps followed under the appropriate state statutes.
- (6) a copy of the Property deed with the correct legal description; and,
- (7) the Lender Liability Exemption Environmental Assessment Tracking Form (Form 4400-196).
- (8) If no sampling was done, please provide reasoning as to why it was **not** conducted. Include this either in the accompanying environmental assessment or as an attachment to this form, and cite language in s. 292. 21(1)(c)2.,h.-i., Wis. Stats.:
  - h. The collection and analysis of representative samples of soil or other materials in the ground that are suspected of being contaminated based on observations made during a visual inspection of the real Property or based on aerial photographs, or other information available to the lender, including stained or discolored soil or other materials in the ground and including soil or materials in the ground in areas with dead or distressed vegetation. The collection and analysis shall identify contaminants in the soil or other materials in the ground and shall quantify concentrations.
  - i. The collection and analysis of representative samples of unknown wastes or potentially hazardous substances found on the real Property and the determination of concentrations of hazardous waste and hazardous substances found in tanks, drums or other containers or in piles or lagoons on the real Property.

"Representative" liability exemption clarification (e.g. trustees, receivers, etc.) - s. 292.21, Wis. Stats. [686]

❖ **Include a fee of \$700.**

Provide the following documentation:

- (1) ownership status of the Property;
- (2) the date of Property acquisition by the representative;
- (3) the means by which the Property was acquired;
- (4) documentation that the representative has no beneficial interest in any entity that owns, possesses, or controls the Property;
- (5) documentation that the representative has not caused any discharge of a hazardous substance on the Property; and
- (6) a copy of the Property deed with the correct legal description.

Clarification of local governmental unit (LGU) liability exemption at sites with: (select all that apply)

- hazardous substances spills - s. 292.11(9)(e), Wis. Stats. [649];
- Perceived environmental contamination - [649];
- hazardous waste - s. 292.24 (2), Wis. Stats. [649]; and/or
- solid waste - s. 292.23 (2), Wis. Stats. [649].

❖ **Include a fee of \$700, a summary of the environmental liability clarification being requested, and the following:**

- (1) clear supporting documentation showing the acquisition method used, and the steps followed under the appropriate state statute(s).
- (2) current and proposed ownership status of the Property;
- (3) date and means by which the Property was acquired by the LGU, where applicable;
- (4) a map and the ¼, ¼ section location of the Property;
- (5) summary of current uses of the Property;
- (6) intended or potential use(s) of the Property;
- (7) descriptions of other investigations that have taken place on the Property; and
- (8) (for solid waste clarifications) a summary of the license history of the facility.

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**Section 4. Request for Liability Clarification (cont.)**

- Lease liability clarification - s. 292.55, Wis. Stats. [646]
- ❖ **Include a fee of \$700 for a single Property, or \$1400 for multiple Properties and the information listed below:**
  - (1) a copy of the proposed lease;
  - (2) the name of the current owner of the Property and the person who will lease the Property;
  - (3) a description of the lease holder's association with any persons who have possession, control, or caused a discharge of a hazardous substance on the Property;
  - (4) map(s) showing the Property location and any suspected or known sources of contamination detected on the Property;
  - (5) a description of the intended use of the Property by the lease holder, with reference to the maps to indicate which areas will be used. Explain how the use will not interfere with any future investigation or cleanup at the Property; and
  - (6) all reports or investigations (e.g. Phase I and Phase II Environmental Assessments and/or Site Investigation Reports conducted under s. NR 716, Wis. Adm. Code) that identify areas of the Property where a discharge has occurred.

General or other environmental liability clarification - s. 292.55, Wis. Stats. [682] - Explain your request below.

- ❖ **Include a fee of \$700 and an adequate summary of relevant environmental work to date.**
- No Action Required (NAR) - NR 716.05, [682]
- ❖ **Include a fee of \$700.**
- Use where an environmental discharge has or has not occurred, and applicant wants a DNR determination that no further assessment or clean-up work is required. Usually this is requested after a Phase I and Phase II environmental assessment has been conducted; the assessment reports should be submitted with this form. This is not a closure letter.
- Clarify the liability associated with a "closed" Property - s. 292.55, Wis. Stats. [682]
- ❖ **Include a fee of \$700.**
- Include a copy of any closure documents if a state agency other than DNR approved the closure.

Use this space or attach additional sheets to provide necessary information, explanations or specific questions to be answered by the DNR.

**Section 5. Request for a Specialized Agreement**

Select the type of agreement needed. Include the appropriate draft agreements and supporting materials. Complete Sections 6 and 7 of this form. More information and model draft agreements are available at: [dnr.wi.gov/topic/Brownfields/lgu.html#tabx4](http://dnr.wi.gov/topic/Brownfields/lgu.html#tabx4).

- Tax cancellation agreement - s. 75.105(2)(d), Wis. Stats. [654]
- ❖ **Include a fee of \$700, and the information listed below:**
  - (1) Phase I and II Environmental Site Assessment Reports,
  - (2) a copy of the Property deed with the correct legal description.
- Agreement for assignment of tax foreclosure judgement - s.75.106, Wis. Stats. [666]
- ❖ **Include a fee of \$700, and the information listed below:**
  - (1) Phase I and II Environmental Site Assessment Reports,
  - (2) a copy of the Property deed with the correct legal description.
- Negotiated agreement - Enforceable contract for non-emergency remediation - s. 292.11(7)(d) and (e), Wis. Stats. [630]
- ❖ **Include a fee of \$1400, and the information listed below:**
  - (1) a draft schedule for remediation; and,
  - (2) the name, mailing address, phone and email for each party to the agreement.

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**Section 6. Other Information Submitted**

Identify all materials that are included with this request.

Send both a paper copy of the signed form and all reports and supporting materials, and an electronic copy of the form and all reports, including Environmental Site Assessment Reports, and supporting materials on a compact disk.

Include one copy of any document from any state agency files that you want the Department to review as part of this request. The person submitting this request is responsible for contacting other state agencies to obtain appropriate reports or information.

Phase I Environmental Site Assessment Report - Date: \_\_\_\_\_

Phase II Environmental Site Assessment Report - Date: \_\_\_\_\_

Legal Description of Property (required for all liability requests and specialized agreements)

Map of the Property (required for all liability requests and specialized agreements)

Analytical results of the following sampled media: Select all that apply and include date of collection.

Groundwater     Soil     Sediment     Other medium - Describe: \_\_\_\_\_

Date of Collection: \_\_\_\_\_

A copy of the closure letter and submittal materials

Draft tax cancellation agreement

Draft agreement for assignment of tax foreclosure judgment

Other report(s) or information - Describe: \_\_\_\_\_

For Property with newly identified discharges of hazardous substances only: Has a notification of a discharge of a hazardous substance been sent to the DNR as required by s. NR 706.05(1)(b), Wis. Adm. Code?

Yes - Date (if known): \_\_\_\_\_

No

Note: The Notification for Hazardous Substance Discharge (non-emergency) form is available at:  
[dnr.wi.gov/files/PDF/forms/4400/4400-225.pdf](http://dnr.wi.gov/files/PDF/forms/4400/4400-225.pdf).

**Section 7. Certification by the Person who completed this form**

I am the person submitting this request (requester)

I prepared this request for: Scott Wahl

Requester Name

I certify that I am familiar with the information submitted on this request, and that the information on and included with this request is true, accurate and complete to the best of my knowledge. I also certify I have the legal authority and the applicant's permission to make this request.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date Signed

\_\_\_\_\_  
Principal Project Director

\_\_\_\_\_  
(847) 805-1048

Title

\_\_\_\_\_  
Telephone Number (include area code)

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## Section 8. DNR Contacts and Addresses for Request Submittals

Send or deliver one paper copy and one electronic copy on a compact disk of the completed request, supporting materials, and fee to the region where the property is located to the address below. Contact a DNR regional brownfields specialist with any questions about this form or a specific situation involving a contaminated property. For electronic document submittal requirements see: <http://dnr.wi.gov/files/PDF/pubs/rr/RR690.pdf>.

### DNR NORTHERN REGION

Attn: RR Program Assistant  
Department of Natural Resources  
223 E Steinfest Rd Antigo, WI 54409

### DNR NORTHEAST REGION

Attn: RR Program Assistant  
Department of Natural Resources  
2984 Shawano Avenue  
Green Bay WI 54313

### DNR SOUTH CENTRAL REGION

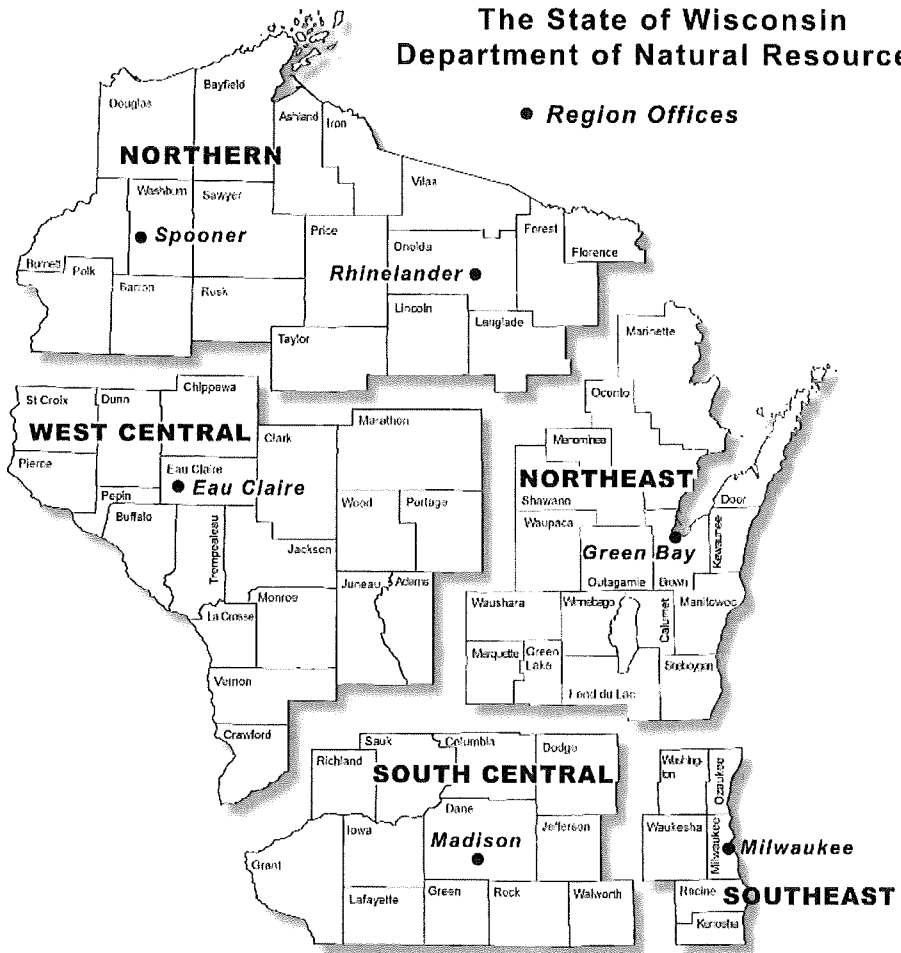
Attn: RR Program Assistant  
Department of Natural Resources  
3911 Fish Hatchery Road  
Fitchburg WI 53711

### DNR SOUTHEAST REGION

Attn: RR Program Assistant  
Department of Natural Resources  
2300 North Martin Luther King Drive  
Milwaukee WI 53212

### DNR WEST CENTRAL REGION

Attn: RR Program Assistant  
Department of Natural Resources  
1300 Clairemont Ave.  
Eau Claire WI 54702



*Note: These are the Remediation and Redevelopment Program's designated regions. Other DNR program regional boundaries may be different.*

DNR Use Only			
Date Received	Date Assigned	BRRTS Activity Code	BRRTS No. (if used)
DNR Reviewer		Comments	
Fee Enclosed? <input type="radio"/> Yes <input type="radio"/> No	Fee Amount \$	Date Additional Information Requested	Date Requested for DNR Response Letter
Date Approved	Final Determination		

**Tyco Fire Products LP**

# **FISH TISSUE SAMPLING WORK PLAN**

Tyco Fire Technology Center  
Marinette, Wisconsin

BRRTS No. 02-38-580694

December 2019



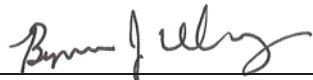
## FISH TISSUE SAMPLING WORK PLAN

Tyco Fire Technology Center  
Marinette, Wisconsin



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Jessie Murray  
Project Ecologist



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Benjamin J. Verburg, PE  
Principal Engineer



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Michael F. Bedard  
Project Lead/Associate Vice President

Prepared for:

Tyco Fire Products LP  
2700 Industrial Parkway South  
Marinette, Wisconsin 54143  
Jeffrey Danko  
Tel (414) 524-3344

Prepared by:

Arcadis US, Inc.  
126 North Jefferson Street  
Suite 400  
Milwaukee  
Wisconsin 53202  
Tel 414 276 7742  
Fax 414 276 7603

Our Ref.:

WI001605

Date:

December 17, 2019



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## ACRONYMS AND ABBREVIATIONS

AFFF	aqueous film-forming foams
BRRTS	Bureau of Remediation Redevelopment Tracking System
COC	chain-of-custody
GIS	geographic information system
MDEQ	Michigan Department of Environmental Quality
NAD	North American Datum
OTA	Outdoor Testing/Training Area
PFAS	per- and poly-fluorinated alkyl substances
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
QA/QC	quality assurance/quality control
R&D	Research and Development
SCP	scientific collectors permit
USEPA	United States Environmental Protection Agency
WDNR	Wisconsin Department of Natural Resources

# 1 INTRODUCTION

On behalf of Tyco Fire Products LP (Tyco), Arcadis US, Inc. (Arcadis) has prepared this Fish Tissue Sampling Work Plan (work plan) to continue investigation of the nature and extent of per- and poly-fluoroalkyl substances (PFAS) related to the Ansul Fire Technology Center (the Site), located at 2700 Industrial Parkway South, Marinette, Wisconsin (**Figure 1**). The investigation work proposed herein is in response to the Wisconsin Department of Natural Resources (WDNR) December 7, 2018 letter stating that additional investigation of PFAS, including fish tissue sampling, must be completed in the area of the Site.

Investigation activities described in this work plan will consist of fish tissue sampling in privately owned ponds near the Site. Objectives of this investigation are to evaluate whether PFAS are present in tissue of edible-size fish, and assess the nature and extent, and potential transport of PFAS into fish tissue.

## 2 SITE BACKGROUND

### 2.1 Site Description and History

The Site is a fire suppressant training, testing, research, and development facility built in the early 1960s. The Site occupies approximately 380 acres with approximately 9 acres used as the Outdoor Testing/Training Area (OTA). The OTA includes the Firefighting School area (where firefighting scenarios are simulated) and the Research and Development (R&D) area (where product testing occurs). The remaining area of the Site is used for manufacturing, warehousing, office, classroom, parking, or is undeveloped.

The Site is bordered by industrial and commercial properties to the west and industrial, commercial, and Marinette School District property to the north. Agricultural land, a cemetery, a golf course, a community center, private owners, including residential property, and undeveloped land owned by the University of Wisconsin Board of Regents border the Site to the east and south.

Aqueous film-forming foams (AFFF) historically have been used at the OTA as part of R&D, quality testing, and firefighting training activities. While the presence of multiple PFAS compounds has been included in historical and recent investigation analyses, the primary focus of the recent site investigation has been on perfluorooctanoic acid (PFOA) and/or perfluorooctanesulfonic acid (PFOS), which have been present in various formulations of these foams. AFFF has not been sprayed outdoors at the OTA since November 2017.

### 2.2 Recent Investigation Work

The results of recent PFAS investigations have been provided previously in the following documents:

- 2016 Site Investigation Report (Bureau of Remediation Redevelopment Tracking System [BRRTS] No. 03-38-001345; Arcadis 2016)
- 2018 Revised Site Investigation Work Plan (BRRTS No. 02-38-580694; Arcadis 2018a)
- 2018 Site Investigation Report (BRRTS No. 02-38-580694; Arcadis 2018b)
- 2019 Data Summary Report (BRRTS No. 02-38-580694; Arcadis 2019).

## 3 GENERAL FIELD ACTIVITIES

The following general field activities apply to the access, permitting, surveying and waste disposal efforts associated with the investigation events described in this work plan.

### 3.1 Access and Permits

Investigation locations are planned on private property. Per Wisconsin state legislature 29.219(1)(d) and 29.228(1)(d), “no fishing license is required for a resident or non-resident to fish in a pond that is a self-contained body of water and that is located entirely on private property owned by a person who gives permission to the resident to fish in the pond.” As such, a fishing license is not required for this investigation. Agreements for access to investigation locations and fish collection will be obtained from property owners prior to mobilization.

In addition to obtaining access, a state of WDNR scientific collectors permit (SCP) will be obtained prior to mobilization and sampling activities. An SCP will authorize fishery collection techniques not generally made available to the public through traditional resident and/or non-resident fishing licenses (e.g. electrofishing, seining, gillnetting, trap netting [fyke/hoop nets], trot lining, etc). A SCP will also identify any special conditions and/or limitations of the permit as defined by the department.

### 3.2 Surveying

The pond locations are already in the project geographic information system (GIS) from Digital Globe Vivid-USA aerial imagery, accessed April 27, 2016 and United States Geological Survey National Hydrography Dataset, accessed fall 2017. Therefore, surveying of the ponds are not needed and will not be performed as part of sampling. The pond coordinates in the GIS are referenced to the Wisconsin State Plane North American Datum 1983 (NAD 83) – Wisconsin Central 4802 Zone system.

### 3.3 Investigation Derived Waste

Decontamination water, disposable equipment, personal protection equipment, and waste generated during investigation activities will be containerized (e.g., 55-gallon steel drums) and staged in a centralized and secured location on Tyco property, pending characterization. Waste disposal options will be assessed following waste characterization.

## 4 FISH TISSUE COLLECTION

Fish tissue samples will be collected to evaluate the nature and extent, and potential transport of PFAS into fish tissue of edible-size fish. The fish tissue sampling approach is based on WDNR (2013), Great Lakes Sport Fish Advisory Task Force (1993), Michigan Department of Environmental Quality (MDEQ 2019), and United States Environmental Protection Agency (USEPA 2000).

### 4.1 Pond Selection

Fish tissue samples will be collected from a subset of ponds sampled for surface water in 2018 and 2019. Three private ponds in the study area were selected to represent a range of PFAS surface water concentrations to evaluate how these may influence PFAS tissue concentrations in fillets of edible-size fish. Each pond represents a distinct location, and fish will be collected from the entire area of each pond, and all accessible habitats, as needed.

### 4.2 Species Selection

Sampling will target three to five edible size fish per species for three individual species, resulting in a total of 9 to 15 fish tissue samples collected per pond. The proposed target species will be collected based on fish availability, abundance, and potential for human consumption (i.e., large enough to produce an edible-size fillet). One species will be targeted from each of the following trophic levels, if available, in each pond:

- Benthic bottom feeder (e.g., brown bullhead catfish [*Ameiurus nebulosus*], channel catfish [*Ictalurus punctatus*])
- Benthopelagic panfish (e.g. yellow perch [*Perca flavescens*], bluegill sunfish [*Lepomis macrochirus*], black crappie [*Pomoxis nigromaculatus*])
- Carnivorous predator (e.g. largemouth bass [*Micropterus salmoides*], smallmouth bass [*Micropterus dolomieu*]).

The species listed above are those commonly found in freshwater ponds in northern latitudes, although others may be present (Schrouder et al. 2002). Two species from the same trophic level may be sampled if all three trophic levels of fish are not well represented for collection (i.e., one benthic bottom feeder and two benthopelagic panfish may be sampled from one pond if that pond does not contain sufficient carnivorous predator fish for sampling). However, similar species of similar size should be collected from each of the three ponds, if available, for data comparison purposes (i.e., if bluegill sunfish is collected as the representative benthopelagic panfish, bluegill sunfish should be collected at each pond if available). Fish of edible size will still be collected from each pond to fill sample size even if the same species are not present in each pond.

Fish sample size for consumption will target regional Wisconsin catch limits (WDNR 2019), as practical. Edible size fish will be defined by the following Wisconsin catch limits for different species as well as the suggested target minimum size for sample collection:

- Catfish – no size limit defined; target minimum of 8 inches in length for bullhead and 12 inches in length for channel catfish
- Panfish – no size limit defined; target minimum of 5 inches in length for sunfish/crappie and 8 inches in length for perch
- Bass – minimum 14 inches; target minimum of 12 inches in length.

Fish samples will target the edible sizes as described above but smaller-sized fish (i.e. under-sized fish that are edible, within reason, will be collected versus not collecting fish at all) may be collected based on fish abundance and availability.

### 4.3 Fish Collection

Edible-size fish will be collected from three ponds that are located on private property. Fish will be collected using the appropriate sampling method(s), which may include electrofishing, seining, gillnetting, trap netting (fyke/hoop nets), trotlining (fishing line with baited hooks), etc., as authorized by a WDNR-issued SCP. State personnel (typically a conservation officer) will be notified of the sampling prior to going into the field as required by the SCP.

During fish collection the target species will be retained in a live-well or clean cooler with fresh site water until sampling is complete. Species to be retained for sample analysis will be based on overall availability, abundance, and potential for human consumption, and the largest sized fish of the 3 most abundant and/or appropriate species will be retained for sampling.

Upon completion of the collection activities, selected fish will be retained, measured and counted to confirm the proper size/number were taken, and processed (described in Section 4.4). The remaining fish will be released live back into the pond. Notes will be taken on the total number of fish species observed during the sampling and their relative abundance.

### 4.4 Fish Processing

Fish will be processed in the field in preparation for shipment to the analytical laboratory for PFAS analysis in edible fillets. All samples will be given a unique sample identification number that will be recorded in the field notebook, and that corresponds to the fish species, sampling date, and collection location. Chain-of-custody (COC) forms, custody seals, address labels, and air-bill forms will be initiated. COC forms will identify the tissue sample preparation procedure and chemical analysis. A copy of the completed COC form and air-bill form will be retained by the sampler.

To begin field processing, sediments, soil, and other debris will be removed from the fish, as needed, by hand-picking or by rinsing with site water, PFAS-free deionized water, or potable water. Fish will be measured (total length), weighed (with an electronic balance), a photograph will be taken, and any minor morphological external abnormalities will be noted, (e.g., blackspot, hook scar, split fins, discolored or blind eye, parasites, etc). Since fish should represent those likely to be eaten by anglers, those with abnormal deformities, gross external lesions, or other obvious health issues may not be sampled (MDEQ 2019). If these are the only fish present, they will still be sampled, since the objective is to characterize PFAS tissue concentrations in edible-size fillets.

Fish body parts (scales, spines and/or otoliths) will be removed during field processing for archival and possible examination later to determine fish age. If sample integrity is compromised, the laboratory may instead be asked to remove the bony structure. Once these steps have been taken, individual fish will be placed whole and ungutted in labelled, plastic Ziploc™ bags and kept on wet ice prior to shipment to the analytical laboratory and filleting in a controlled environment. The sample label will contain the sample identification number and sample date.



## 5 QUALITY ASSURANCE AND QUALITY CONTROL

### 5.1 Special Considerations for PFAS Sampling

The detection of PFAS compounds at very low concentrations can be influenced by common PFAS-containing materials that may be present at the sampling site. Therefore, sampling protocols are to be strictly followed by the sampling personnel. To minimize the potential for cross-contamination, attention will be given to sampling materials, decontamination procedures, as well as clothing and personal care products used by sampling personnel (MDEQ 2018 and 2019).

Sampling for PFAS compounds will include the submission of one laboratory-supplied reagent field blank per day to analyze for the presence of ambient PFAS in the sampling area. PFAS-free water used for the reagent field blank sample is brought to the Site in a laboratory-supplied bottle. Field staff will transfer the laboratory-supplied PFAS-free water into an empty sample bottle. This reagent field blank will be placed in the same cooler as other samples intended for PFAS analyses.

All equipment will be decontaminated between sample locations with PFAS-free water. Only Alconox, Liquinox, or methanol can be used as decontamination materials. To assess the adequacy of the decontamination process, a rinse blank will be collected every 20 samples or per day, whichever is more frequent. To prepare a rinse blank, a sample of PFAS-free water will be poured over or through decontaminated field equipment before collection of environmental samples.

To prepare a rinse blank, a sample of PFAS-free water will be poured over or through decontaminated equipment (e.g. stainless-steel tray or fillet knife) or purchased supplies (i.e. Ziploc™ bag) before use. Rinse blanks of the Ziploc™ bags will be collected every 20 samples or per day, whichever is more frequent.

### 5.2 Laboratory Methods and Analysis

Samples will be shipped on ice and handled with chain-of-custody documentation. All samples will be sent to TestAmerica or an equivalent lab that is accredited for filleting and PFAS analysis. Fish tissue samples for scaled fish (i.e., bass, perch, sunfish, crappie) will be prepared as skin-on, scales-off fillets, and scaleless fish (i.e., bullhead, catfish) will be processed as skin-off fillets, based on the procedures in WDNR (2013). Each fillet will be taken from behind the head to the tail and from the top of the back to the belly.

Once the edible-size fillet is removed, it will be homogenized and analyzed for the 14 PFAS compounds reported using USEPA Method 537. Method 537 is an analytical method specific to drinking water, however, it has been modified to analyze other environmental media samples including fish tissue. As part of internal laboratory quality assurance/quality control (QA/QC) measures, one laboratory duplicate of fish homogenate will be collected for every 20 tissue samples collected as listed in Table 5-1.

**Table 5-1. Laboratory Methods and QA/QC Frequency**

<b>Matrix</b>	<b>Parameter</b>	<b>Laboratory Method</b>	<b>Lab Duplicate Frequency</b>
Tissue	PFAS	USEPA 537	1/20

Internal laboratory QA/QC should also consist of one laboratory blank and one laboratory control sample (or blank spike) per batch of samples and any additional measures as indicated by the laboratory QA/QC procedures.

## 6 REPORTING

Field investigation information will be communicated to WDNR through interim data summaries and in a future Supplemental Site Investigation Report. Interim data summaries to the WDNR will include recommendations as to whether further characterization or monitoring work is needed. Submission of the Supplemental Site Investigation Report is not anticipated until delineation of impacts in all media of concern is sufficient to meet the requirements as detailed in Chapter NR 716 of the Wisconsin Administrative Code. Per requirements of the SCP, results are also to be reported.

## 7 ANTICIPATED SCHEDULE

The anticipated schedule for field investigation and reporting is as follows:

- Field sampling:
  - Fish Tissue Sampling: approximately summer 2020.
- Reporting:
  - Interim data summaries will be provided to WDNR after completion of significant investigation elements.
  - Supplemental Site Investigation Report submitted to WDNR: approximately December 2020, or as adjusted, if necessary, per the considerations presented in Section 6 above.

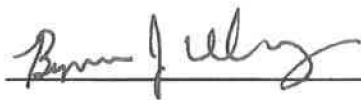
In the event the schedule is affected by weather, access, or other factors, WDNR will be provided an updated schedule for the activities.

## 8 REFERENCES

- Arcadis. 2016. Site Investigation Report. Ansul Fire Technology Center Site. 2700 Industrial Parkway, Marinette, Wisconsin. BRRTS No. 03-38-001345. November 22, 2016.
- Arcadis. 2018a. Revised Site Investigation Work Plan. Ansul Fire Technology Center Site. 2700 Industrial Parkway, Marinette, Wisconsin. BRRTS No. 02-38-580694. April 20, 2018.
- Arcadis. 2018b. Site Investigation Report. Ansul Fire Technology Center Site. 2700 Industrial Parkway, Marinette, Wisconsin. BRRTS No. 02-38-580694. September 28, 2018.
- Arcadis. 2019. Data Summary Report. Ansul Fire Technology Center Site. 2700 Industrial Parkway, Marinette, Wisconsin. BRRTS No. 02-38-580694. March 8, 2019.
- Great Lakes Sport Fish Advisory Task Force. 1993, Protocol for a Uniform Great Lakes Sports Fish Consumption Advisory. Chicago, IL.
- MDEQ. 2019. Fish Tissue PFAS Sampling Guidance. January 2019.
- MDEQ. 2018. General PFAS Sampling Guidance. Introduction to PFAS, Biosecurity Recommendations, and General Recommendations to Decrease the Possibility of Cross-Contamination. October 16.
- Schrouder, J.D., C.M. Smith, P.J. Ruzs, R.J. White, D.L. Garling and G.R. Dudderar. 2002. Managing Michigan Ponds for Sport Fishing. Michigan State University Bulletin E-1554.
- USEPA. 2000. Guidance for Assessing Chemical Contaminant Data for Use in Fish Advisories. EPA 823-B-00-007. November.
- WDNR. 2013. Fisheries Management Handbook: Surveys and Investigations: Fish Contaminant Monitoring, Consumption Advice and Policies. November.
- WDNR. 2019. Guide to Wisconsin Hook and Line Fishing Regulations 2019-2020: Effective April 1, 2019 through March 31, 2020. Bureau of Fisheries Management.

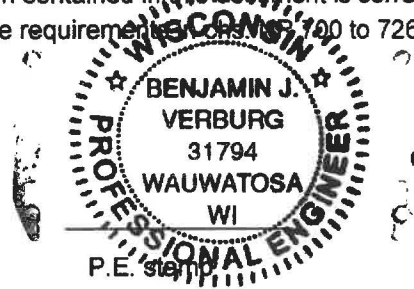
## 9 NR 712.09 CERTIFICATION

I, Benjamin Verburg, hereby certify that I am a registered professional engineer in the State of Wisconsin, registered in accordance with the requirements of ch. A-E 4, Wis. Adm. Code; that this document has been prepared in accordance with the Rules of Professional Conduct in ch. A-E 8, Wis. Adm. Code; and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code.



WI PE 31794-006

Signature, title and P.E. number



I, Christopher S. Peters, hereby certify that I am a hydrogeologist as that term is defined in s. NR 712.03 (1), Wis. Adm. Code, am registered in accordance with the requirements of ch. GHSS 2, Wis. Adm. Code, or licensed in accordance with the requirements of ch. GHSS 3, Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code.



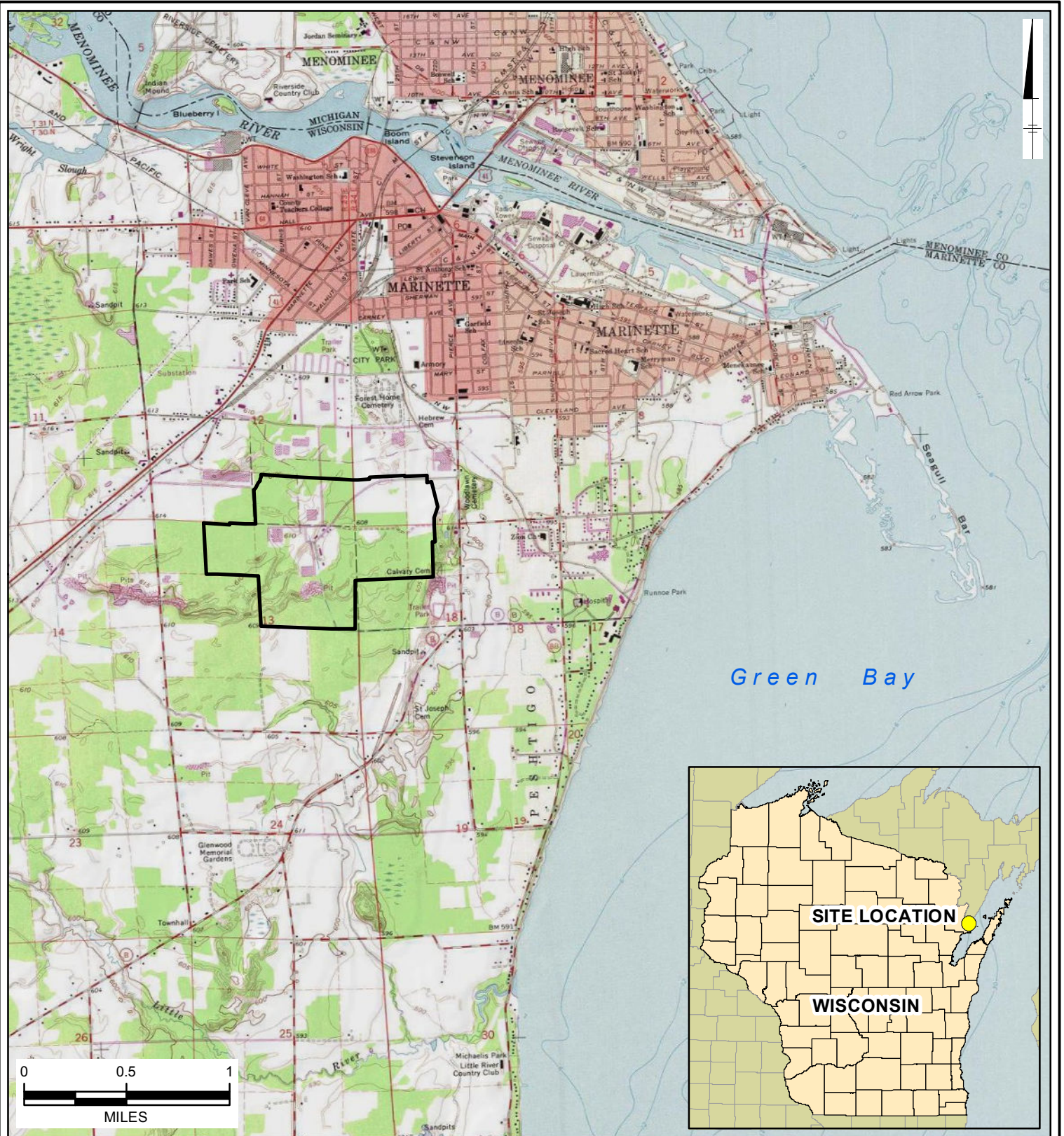
WI PG 1054-013

Signature and title and P.G. number



**FIGURE**





City: Minneapolis/Cityx Div/Group: IMDVC Created By: msmiller  
 TYCO Marinette WI  
 ZGISProjects\_ENV\TYCO\_Marinette\_WI\MXD\2019-09\Fig1\_SiteLocation.mxd 9/26/2019 4:21:19 PM

**LEGEND:**

APPROXIMATE SITE PROPERTY BOUNDARY

**NOTES:**

1. TOPOGRAPHIC MAP SOURCE: COPYRIGHT: © 2013 NATIONAL GEOGRAPHIC SOCIETY, I-CUBED, ACCESSED SEPTEMBER, 2019.

**TYCO FIRE PRODUCTS, LP**  
**MARINETTE, WISCONSIN**  
**FISH TISSUE SAMPLING WORK PLAN**

**SITE LOCATION**

FIGURE

1



Arcadis U.S., Inc.

126 North Jefferson Street

Suite 400

Milwaukee, Wisconsin 53202

Tel 414 276 7742

Fax 414 276 7603

[www.arcadis.com](http://www.arcadis.com)

A decorative graphic consisting of three thin orange lines. One line is horizontal, extending across the bottom of the page. Two other lines are diagonal, starting from the bottom left and extending towards the top right, crossing the horizontal line.